



Job Number: SVGJ-140266

Company: PDC

Lease/Well: Seeley Lake 3

Location: Weld County, CO

Rig Name: MS Slickline

RKB: 0'

G.L. or M.S.L.: GL

State/Country: Colorado/USA

Declination: 8.48°

Grid: East To True North

File name: Y:\WINSER~1\2014SU~1\PDC\GJ\SEELEY~1\3.SVY

Date/Time: 07-Mar-14 / 14:45

Curve Name: Surface - 6200' M.D. (Rate Gyro)

## MS Survey

### WINSERVE SURVEY CALCULATIONS

*Minimum Curvature Method*

*Vertical Section Plane .00*

*Vertical Section Referenced to Wellhead*

*Rectangular Coordinates Referenced to Wellhead*

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>C L O S U R E</i>		<i>Dogleg Severity Deg/100</i>
							<i>Distance FT</i>	<i>Direction Deg</i>	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.16	228.72	100.00	-.09	-.10	-.09	.14	228.72	.16
200.00	.25	168.15	200.00	-.40	-.17	-.40	.43	202.54	.22
300.00	.10	194.16	300.00	-.70	-.14	-.70	.71	191.50	.17
400.00	.58	103.51	400.00	-.90	.33	-.90	.96	159.88	.59
500.00	.19	136.52	499.99	-1.14	.94	-1.14	1.47	140.56	.43
600.00	.70	144.68	599.99	-1.76	1.40	-1.76	2.25	141.38	.51
700.00	.50	98.09	699.99	-2.32	2.19	-2.32	3.19	136.63	.51
800.00	.78	132.34	799.98	-2.84	3.12	-2.84	4.22	132.24	.46
900.00	.20	119.49	899.98	-3.38	3.78	-3.38	5.07	131.82	.59

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	.38	168.45	999.98	-3.79	4.00	-3.79	5.51	133.49	.29
1100.00	.49	174.57	1099.97	-4.54	4.10	-4.54	6.12	137.90	.12
1200.00	.50	177.52	1199.97	-5.40	4.16	-5.40	6.82	142.39	.03
1300.00	.39	190.70	1299.97	-6.17	4.12	-6.17	7.42	146.29	.15
1400.00	.64	132.38	1399.96	-6.88	4.47	-6.88	8.21	147.02	.55
1500.00	.58	187.51	1499.96	-7.76	4.81	-7.76	9.13	148.19	.57
1600.00	.39	135.02	1599.95	-8.51	4.99	-8.51	9.86	149.61	.46
1700.00	.56	207.93	1699.95	-9.18	5.00	-9.18	10.45	151.42	.58
1800.00	.64	199.31	1799.95	-10.14	4.59	-10.14	11.13	155.65	.12
1900.00	.66	180.90	1899.94	-11.24	4.39	-11.24	12.07	158.65	.21
2000.00	.54	153.92	1999.93	-12.24	4.59	-12.24	13.07	159.44	.30
2100.00	.59	219.61	2099.93	-13.06	4.47	-13.06	13.80	161.10	.61
2200.00	.75	202.29	2199.92	-14.06	3.89	-14.06	14.59	164.52	.26
2300.00	.53	179.39	2299.92	-15.13	3.65	-15.13	15.56	166.44	.33
2400.00	.67	227.59	2399.91	-15.99	3.22	-15.99	16.31	168.60	.51
2500.00	.77	214.25	2499.90	-16.94	2.41	-16.94	17.11	171.89	.19
2600.00	.76	216.57	2599.90	-18.02	1.64	-18.02	18.10	174.80	.03
2700.00	.84	208.06	2699.89	-19.20	.90	-19.20	19.22	177.32	.14
2800.00	.78	188.11	2799.88	-20.52	.46	-20.52	20.53	178.72	.29
2900.00	.89	204.47	2899.87	-21.90	.04	-21.90	21.90	179.89	.26
3000.00	1.07	229.85	2999.85	-23.21	-.99	-23.21	23.23	182.45	.46
3100.00	1.20	237.50	3099.83	-24.38	-2.59	-24.38	24.52	186.07	.20
3200.00	1.42	249.00	3199.81	-25.38	-4.63	-25.38	25.80	190.34	.34
3300.00	1.72	273.93	3299.77	-25.73	-7.28	-25.73	26.74	195.81	.74
3400.00	2.35	269.53	3399.71	-25.64	-10.83	-25.64	27.83	202.90	.65
3500.00	2.75	284.08	3499.61	-25.07	-15.21	-25.07	29.33	211.24	.76
3600.00	3.00	292.75	3599.48	-23.48	-19.95	-23.48	30.81	220.36	.50
3700.00	2.70	288.25	3699.36	-21.73	-24.60	-21.73	32.82	228.55	.37
3800.00	2.95	285.50	3799.24	-20.30	-29.32	-20.30	35.66	235.30	.28

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3900.00	2.37	280.05	3899.13	-19.25	-33.83	-19.25	38.93	240.36	.63
4000.00	2.34	283.19	3999.04	-18.43	-37.85	-18.43	42.10	244.04	.13
4100.00	2.29	283.84	4098.96	-17.48	-41.78	-17.48	45.29	247.29	.06
4200.00	2.08	293.59	4198.89	-16.28	-45.39	-16.28	48.22	250.27	.43
4300.00	1.90	306.93	4298.83	-14.56	-48.37	-14.56	50.52	253.25	.50
4400.00	1.79	318.20	4398.78	-12.40	-50.74	-12.40	52.23	256.27	.38
4500.00	1.86	316.36	4498.73	-10.06	-52.90	-10.06	53.85	259.23	.09
4600.00	1.64	311.52	4598.68	-7.93	-55.09	-7.93	55.66	261.80	.26
4700.00	1.92	278.88	4698.64	-6.73	-57.82	-6.73	58.21	263.36	1.04
4800.00	1.91	279.60	4798.58	-6.19	-61.12	-6.19	61.43	264.22	.03
4900.00	2.17	273.98	4898.52	-5.78	-64.65	-5.78	64.91	264.89	.33
5000.00	2.17	281.93	4998.45	-5.26	-68.39	-5.26	68.59	265.60	.30
5100.00	2.07	276.85	5098.38	-4.65	-72.04	-4.65	72.19	266.30	.21
5200.00	1.48	301.59	5198.33	-3.76	-74.93	-3.76	75.02	267.13	.95
5300.00	1.11	312.97	5298.30	-2.42	-76.74	-2.42	76.78	268.19	.45
5400.00	1.27	314.66	5398.28	-.98	-78.23	-.98	78.24	269.28	.16
5500.00	1.66	351.40	5498.25	1.23	-79.24	1.23	79.25	270.89	.99
5600.00	1.21	342.12	5598.22	3.66	-79.78	3.66	79.86	272.63	.51
5700.00	1.46	11.88	5698.19	5.92	-79.84	5.92	80.06	274.24	.73
5800.00	1.20	13.10	5798.17	8.18	-79.34	8.18	79.76	275.89	.26
5900.00	1.24	14.53	5898.14	10.25	-78.83	10.25	79.50	277.41	.05
6000.00	1.28	40.88	5998.12	12.14	-77.83	12.14	78.77	278.87	.58
6100.00	3.05	53.87	6098.05	14.55	-74.95	14.55	76.35	280.99	1.83
Last Survey Depth Recorded									
6200.00	1.81	56.99	6197.95	16.98	-71.48	16.98	73.47	283.37	1.25